STATE OF CALIFORNIA

ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION

In the Matter of:	)	Docket No.02-IEP-01
Informational Proceedings and	)	
Preparation of the 2003	)	
Integrated Energy Policy Report	)	
_____	)	October 9, 2002

STAFF PROPOSAL FOR CONSIDERATION AT OCTOBER 22, 2002 HEARING

OVERVIEW

This memo provides a staff draft proposal of the scope of the *Integrated Energy Policy Report* to be sent to the Governor and Legislature on November 1, 2003. It contains a preliminary list of issues to be presented in the *Integrated Energy Policy Report* and its subsidiary documents. Additionally, as required by statute, the *Integrated Energy Policy Report* will include an assessment and forecast of energy system reliability and the need for resource additions, efficiency, and conservation. This assessment will consider all aspects of energy industries and markets that are essential for the state economy, general welfare, public health and safety, energy diversity, and protection of the environment.

The Committee will take public comment on the proposed trends and issues analyses at its October 22, 2002 hearing. The public and other state agencies are requested to provide their suggestions on analyses and issues that should be reflected in this report. Following the hearing, the Committee will choose where Energy Commission staff should focus its attention and invite the contributions of other parties. In undertaking this effort, the Commission staff expects to review other federal and state proceedings for input to take advantage of the records and decisions of other policy bodies.

BACKGROUND

Senate Bill 1389 (Chapter 568, Statutes of 2002; Bowen) requires the Energy Commission to adopt an *Integrated Energy Policy Report* every two years. The first report is due to the Governor and the Legislature in November 2003. It must provide an overview of major energy trends and issues facing California, including supply, demand, price, reliability, and efficiency. It must also assess the impacts of these trends and issues on public health and safety, the economy, resources, and the environment. Finally, it must make policy recommendations to the Governor and the Legislature that

are based on an in-depth and integrated analysis of the most current and pressing energy issues facing the state.

To begin developing this report, the Commission opened an informational proceeding (Docket No. 02-IEP-01) and designated the Ad Hoc *Integrated Energy Policy Report* Committee to oversee the process. The Commission's order instituting this proceeding lays out a preliminary schedule of events and is available at: [http://www.energy.ca.gov/energypolicy/notices/2002-09-18_oii_notice.html].

Report Audience and Focus

The primary audience of the *Integrated Energy Policy Report* is the Governor and Legislature. Consequently, the Commission staff recommends that the report focus on the energy policy issues that are likely to be of greatest concern to the state's policy makers in November 2003. Although there are likely to be significant changes during the course of the next 12 months, we expect one of the primary concerns a year from now to still be the condition of the state's energy system. This is not only because of the critical relationship between energy and the state's economy and environment but because of the tremendous uncertainties that remain in the structure and design of the energy markets, financial condition of utilities and the energy industries, and improvements needed to the energy infrastructure. We recommend this report focus on:

- the adequacy of all aspects of the State's energy system – electricity, natural gas, and petroleum products,
- its implications on reliability, the economy, and the environment, and
- policy actions that can be implemented to respond to specific, critical problems.

The implications should emphasize the risk as well as the benefits of the system's adequacy and the time frame should consider the immediate future as well as the next 5 to 10 years.

To accomplish this objective, we recommend that the report provide basic energy outlooks of supply, demand and price for electricity, natural gas and petroleum products under different scenarios. We also recommend it consider a number of different strategies – energy efficiency and demand response, renewable technology development, distributed energy facilities, and focused research and development programs – to respond to current and emerging issues. Finally, we recommend the report develop selected policy analysis for issues that appear to be ripe for policy-making in the fall of 2003 and that it develop information needed to assist the State in making those choices.

To be successful, the *Integrated Energy Policy Report* must be focused and selective rather than being expansive. We believe it will be the most constructive to present an accurate and integrated view of the primary energy systems of the state and local areas

facing the most severe energy problems rather than providing detailed assessments of all the energy issues facing the state and all of its sub-regions. In subsequent years, if the direction of this report is appropriate, these assessments can be expanded.

Report Structure and Timing

The Warren-Alquist Act directs the Commission to submit reports that comprise the integrated energy policy work to be carried out by the Commission in coordination with other state agencies. The *Integrated Energy Policy Report* is the culmination of all the subordinate work and is intended to present a comprehensive and integrated view of the state of the State's energy system and the most demanding policy decisions.

The Commission staff recommend that the reports present the existing conditions, expected trends, and possible scenarios related to their aspects of the energy system. In assessing the trends and scenarios, the staff recommend these reports identify the implications on reliability, the economy (including price) and the environment (including global climate change). Critical policies and actions may be identified for consideration. The reports should then assess specific strategies to respond to the energy trends and issues.

The staff recommends that the analytic findings and potential recommendations be released in June or July 2003 and be subject to Committee hearings. *The Integrated Energy Policy Report* would be subject to hearings in October 2003.

The following describes the staff's preliminary thoughts on analyses and issues that could be discussed in the *Integrated Energy Policy Report* or its subordinate documents.

TRENDS AND OUTLOOKS

Electricity and Natural Gas Demand Trends and Outlook

Staff will develop baseline and reasonable alternative electricity and natural gas demand forecast for 2003 through 2013. Forecasts will be completed for the residential, commercial, industrial, and other sectors. The California demand studies will cover both sub-region and statewide developments. Baseline electricity and natural gas demand forecasts will be compiled for the rest of the West.

The demand trends analysis will examine four key uncertainties:

- How will demand (especially natural gas) be affected by the economy and energy prices? Forecasts of two major scenarios will update our assessment of the sensitivity of demand to economic conditions:
  - A strong economic recovery/low gas prices/declining DSM scenario.
  - A slow or delayed recovery/high gas prices/high DSM scenario that would represent a reasonable lower bound for expected demand.

- What is the effect of weather on electricity and natural gas demand? Results will be used to develop a monthly gas demand forecast under various weather conditions.
- To what extent is the voluntary conservation from 2001 continuing to dampen demand growth? What are the differences across regions or economic sectors?
- How will the characteristics of new rate structures affect the potential for improving demand elasticity?

Electricity, Natural Gas, Renewable Resource and Efficiency Supply Trends and Outlook

Resource development, retirement and demand trajectories can be estimated with a degree of certainty for the next several years, but become far more uncertain in the later years. The supply trends analysis will examine key uncertainties:

- The progress of new infrastructure projects in California and throughout the West.
- The short-term (2003-2005) and long-term (2006-2013) electricity supply adequacy risks, considering potential supply uncertainties and the varying demand scenarios listed above.
- The probabilities of electricity generation and transmission outages and potential for natural gas curtailments.
- The new capabilities of the pipeline and storage system to determine if there can be sufficient natural gas supplies under unusually high gas peak demand periods.

Staff will report on emerging trends in the renewables industry, as well as progress towards ensuring the operation of existing facilities, and the development of in-state resources. Program detail on implementing the Energy Commission's Renewable Energy Program will be reported separately in the various reports required pursuant to previously enacted legislation.

Staff will report on emerging trends in energy efficiency and energy research, development and demonstration activities that advance science or technology to provide public benefits. Early in the process, we will describe what recent R&D findings might shape the future direction of the energy industry. At the close of this proceeding, we will report to the Legislature conclusions we have reached in the issue analyses regarding promising targets for research.

The report will describe the international energy market prospects and evaluate the Commission's export program activities as well as assess the effectiveness of California's energy industry in entering foreign markets.

Transportation Fuels and Infrastructure Trends and Outlook

Staff will develop 20-year baseline forecasts of transportation fuel supply, demand and for California. These baseline forecasts describe the impact of current trends.

- Continuing growth in transportation fuels demand

- Continuing primary reliance on petroleum fuels - DOE and most other sources predict crude oil will continue to be the dominant source of moderately priced transportation fuels over the next twenty years. Measures to reduce carbon emissions, perhaps some price increases in crude oil due to higher demand, and other factors may cause the beginning of significant use of other fuels for transportation.
- The relatively high cost for a new refinery and permitting constraints in California most likely preclude the construction of additional refineries in the state. There may continue to be opportunities to increase production. California's demand for refined products will likely grow at a faster rate than the growth in its refining capacity.
- Growing reliance on imported fuels - With the effective loss of refinery capacity due to the MTBE phase-out and other regulatory requirements combined with the likely increasing shortfall of future refinery capacity growth relative to demand growth, transportation in California will increasingly rely on imported fuels.

Energy-Related Environment and Public Health Trends and Outlook

Our environmental and public health trends analysis will update the Commission's 2001 Environmental Performance Report and the background indicators from the 2002 Environmental Protection Indicators for California (EPIC) Report, prepared by the California Environmental Protection Agency and the California Resources Agency. We will also ask other State agencies for the most recent indicators for their areas of expertise.

The 2003 update will provide status and trends on the environmental aspects of our state's power generation, electric transmission and natural gas supply Staff will report on progress in reducing statewide greenhouse gas emissions and address the effects of climate change on California.

POTENTIAL ISSUES

The outlooks developed in the Commission's Energy Policy Report proceedings for California's complete energy system – electricity, natural gas and transportation fuels – will be assessed for implications that might emerge given physical, economic, market and regulatory uncertainties. In particular, four thematic issues will be explored for each energy supply sector:

- Infrastructure and constraint implications
- Adequacy, reliability, and risk
- Price, economy, consumer and business responses and choices
- State and global environment.

Issue 1: Infrastructure and Constraint Implications

Based on the trends assessment, the outlook for baseline energy infrastructure indicates key constraints will exist in future years for transmission, refinery capacity and

natural gas storage, for example. A range of options exist for addressing these constraints each having a different set of price, environment and consumer choice implications.

- What infrastructures might emerge given differing physical, market and regulatory uncertainties?
- How will State and federal policies affect California's supply, demand and availability of energy in its many forms?
- What regional, statewide and local transmission upgrades would benefit California, compared to generation, natural gas or demand reduction options?
- If beneficial upgrades are identified, what State actions are appropriate?
- When will increased natural gas infrastructure be beneficial?
- Are there likely to be constraints in the marine infrastructure for importing crude oil and refined petroleum products?
- What methods are available for affecting transportation energy demand?
- What are the implementation issues associated with the Renewable Portfolio Standard?

Issue 2: Adequacy, Reliability, and Risk

Emerging electricity industry structures and markets in California and the greater western region will drive many outcomes related to energy system adequacy. Key to formulation of adequacy and reliability policy will be consideration of a range of system choices and the risk associated with these choices.

- What would the State need to do to foster more reliable energy services?
- What are the trade-offs in alternative means of securing reliable electricity, natural gas and transportation fuels supplies?
- How should California deal with the increased natural gas supply and price uncertainty caused by the tighter integration of the natural gas and electricity markets?
- Should the State set targets for energy efficiency to achieve a better mix of energy efficiency, load management and demand response programs?
- How much should California reduce reliance on petroleum fuels compared to baseline levels?

Issue 3: Prices, Volatility, and Consumer Response

Recent price volatility, as well as the overall level of prices, has changed how consumers and businesses use some forms of energy. The state needs to assess the likelihood of the factors responsible for price spikes for California's electricity, transportation fuels and natural gas markets reoccurring in future years. Key policies will also establish how increased costs will be translated into retail prices.

In the future, new metering, data collection and small generation technologies will provide customers with opportunities to exercise choice in the electricity and natural gas

sectors. These decisions will feed back into the electricity and gas supply systems, changing the loads that these customers place on established infrastructure. In the transportation sector, new technologies are allowing manufacture of vehicles with reduced fuel use and that operate on alternative fuels. Over time, these may impact both greenhouse gas emissions as well as concerns over petroleum processing infrastructure in California.

Staff proposes to consider the following issues:

- What are the current policies affecting the ability of customers to decide to change or reduce their loads on the energy supply system?
- What demand responsive capacity might be achieved in the future, and what policies would affect this? How much can we count on demand responsive programs and tariffs to reduce peak?
- Should we adjust reserve margins based on demand responsive programs, tariffs and growth in distributed generation?
- How will the role and magnitude of clean, renewable distributed generation develop, given current policies?
- What role for renewable distributed generation best meets the needs of California's economy, and reduces risk to the energy system?
- What infrastructure and operational issues are constraining consumer interest in alternative technology and fuel vehicles?
- What is the appropriate role of alternative technology and fuel vehicles among choices available to Californians?

Issue 4: State and Global Environment.

Even with its long history of reducing emissions from power plants, industry and motor vehicles, California still does not meet federal or state standards for healthy air for most of its population. Allocation of fresh water among competing uses is becoming increasingly difficult, a situation certain to be exacerbated by continuing population increases. Climate change is affecting the state's hydrology and could reduce usable surface water supplies by 10-20 percent in coming decades.

- What actions are needed to continue protecting the environment and public health while providing efficient energy infrastructure?
- What mitigation and adaptation initiatives should be considered in the energy sector to address a changing climate?
- Can the state continue to site power plants with the existing federal and state regulatory requirements for emission reduction credits (ERC)?
- How can the state partner with the federal government to achieve increased efficiency in motor vehicles?